

### **ABSTRACT**

Method, apparatus, and program means for performing a parallel table lookup using SIMD instructions. The method of one embodiment comprises loading a table having a set of L data elements. A determination of whether the table fits into a single register is made. A data lookup into the table is performed with a packed data shuffle operation if the determination indicates that the table does fit into a single register. The table is divided into a plurality of sections if the table does not fit into a single register. Each of the sections is sized to fit into a single register. A plurality of packed data shuffle operations are executed on the plurality of sections to look up data in the table.